AMENDMENTS TO THE CLAIMS

Please amend the claims as follows:

Claim 1-12 (Cancelled)

Claim 13. **(Currently Amended)** A process of a conversion of heat energy into mechanical energy by means of periodical changing volume, pressure and temperature of a work medium, in separate independent chambers of a heat engine, comprising the steps of:

sucking the work medium into a first stage chamber by enlarging the volume of the first stage chamber by motion of a piston of the first stage chamber;

transferring the work medium from the first stage chamber into a second stage chamber, concurrently with decreasing the volume of the first stage chamber by motion of the piston of the first stage chamber and increasing the volume of the second stage chamber by motion of a piston of the second stage chamber;

transferring the work medium from the second stage chamber through a third stage chamber of a constant volume to a fourth stage chamber concurrently with decreasing the volume of the second stage chamber by motion of the piston of the second stage chamber and increasing the volume of the fourth stage chamber by motion of a piston of the fourth stage chamber; while supplying heat to the work medium passing through the third stage chamber;

transferring the work medium from the fourth stage chamber to a fifth stage chamber, ~~currently~~ concurrently with decreasing the volume of the fourth stage chamber by motion of the piston of the fourth stage chamber and increasing the volume of the fifth stage chamber by motion of a piston of the fifth stage chamber; and

discharging the work medium from the fifth stage chamber by decreasing the volume of the fifth stage chamber by motion of the piston of the fifth stage chamber;

wherein mechanical energy is consumed when decreasing the volume of the first stage chamber and decreasing the volume of the second stage chamber, and mechanical energy is carried away when increasing the volume of the fourth stage chamber and increasing the volume of the fifth stage chamber.

Claim 14. (Previously Presented) A process according to claim 13, further comprising the step of:

cooling the work medium during transfer from the first stage chamber into the second stage chamber.

Claim 15. **(Currently Amended)** A process according to claim 13, further comprising the step of:

transferring the work medium from the fifth stage chamber to the first stage chamber while cooling the work medium and ~~currently~~ concurrently decreasing the volume of the fifth stage chamber and increasing the volume of the first stage chamber.

Claim 16. (Cancelled)

Claim 17. **(Currently Amended)** A process according to claim 13, further comprising the step of:

transferring the work medium from the fifth stage chamber by decreasing the volume of the fifth stage chamber by motion of the piston of the fifth stage chamber to ~~an outer circuit of~~ a heat exchanger ~~creating an output of the third stage chamber~~ for transmission of the heat energy to the work medium passing through the third stage chamber.

Claim 18. (Previously Presented) An apparatus for conversion of heat energy into mechanical energy by means of periodical changing volume, pressure and temperature of a work medium in separate independent chambers of an internal combustion engine with rolling pistons, comprising:

a first stage chamber having a variable volume and a second stage chamber having a variable volume, the largest volume of the first stage chamber being larger than the largest volume of the second stage chamber,

a third stage chamber having a constant volume, and

a fourth stage chamber having a variable volume and a fifth stage chamber having a variable volume, the largest volume of the fifth stage chamber being larger than the largest volume of the fourth stage chamber, and the largest volume of the fifth stage chamber being larger or equal to the largest volume of the first stage chamber;

wherein a rolling piston of the second stage chamber is connected by a shaft to a rolling piston of the fourth stage chamber and the rolling piston of the first stage chamber is connected by a shaft to a rolling piston of the fifth stage chamber.

Claim 19. (Previously Presented) An apparatus according to claim 18, wherein the fifth stage chamber is provided with an intake valve.

Claim 20. (Previously Presented) An apparatus according to claim 18, wherein a work medium inter stage cooler is placed between the first stage chamber and the second stage chamber.

Claim 21. (Previously Presented) An apparatus according to claim 18, wherein the third stage chamber is a combustion chamber or a heat exchanger.